

### Activity 3

# Companion to Superfund — the Resource Conservation and Recovery Act (RCRA) Program



## Purpose

This activity helps students understand our national program for properly disposing of the hazardous and nonhazardous wastes we generate. Students will learn about the Resource Conservation and Recovery Act (RCRA) and the regulations developed under the law that ensure that municipal and hazardous wastes are safely transported, treated, and disposed of. Students also will participate in a class activity to discover how their community handles the wastes they generate.

Duration	2 1/4 class periods
Grade Level	9-12
Key Terms/ Concepts	Hazardous Waste Landfill Municipal solid wastes RCRA Underground storage tank
Suggested Subjects	Civics/Government Physical Science Social Studies

## Background

Congress enacted the Resource Conservation and Recovery Act (**RCRA**) in 1976, to conserve energy and natural resources, reduce the amount of waste generated, and ensure that all wastes are managed in an environmentally sound manner. The U.S. Environmental Protection Agency (EPA) developed regulations to create the RCRA program. The program ensures the safe storage and disposal of wastes in three basic categories: (1) **municipal solid waste**; (2) **hazardous waste** and (3) **underground storage tanks** used for storing hazardous materials. Much of the program is operated by the states at the state level.

For more information on RCRA and hazardous and nonhazardous waste management, see the Suggested Reading list found at the end of the Haz-Ed materials. Other Haz-Ed materials that are related to this topic include *Fact Flash 7: Pollution Prevention* and *Activity 10: Pollution Prevention*.



## Preparation

1. Gather the following materials:
  - Copies for each student of *Fact Flash 6: Resource Conservation and Recovery Act (RCRA)*
2. Read Fact Flash 6 to prepare for your lecture
3. Distribute Fact Flash 6 and have students read it for homework.

## Procedure

### Class #1

1. Discuss the RCRA program in class using the contents of Fact Flash 6, which students were assigned to read as homework.
2. Divide the class into teams and assign each team to gather facts on how your community addresses each of the waste disposal subjects listed below. *NOTE: You may need to call your local waste management agency prior to class to determine which of the subjects below are appropriate for your community.*

Municipal Solid Waste Landfill: What does it do? Where is the **landfill** located? Who owns the landfill? Who operates the landfill? How much waste does it accept? What kind of waste does it accept? Where does the waste come from? What is the cost of disposal in the landfill? When was it built? When (in how many years) is the landfill expected to be full? What safeguards are in place to prevent contamination of the surrounding area?

Wastewater Treatment Plant: What does it do? Where is it located? Who owns the treatment plant? Who operates the treatment plant? Where does the wastewater come from? How much water can be treated? What is the cost of water treatment? What kind of contaminants can be removed from water? What kind of contaminants cannot be removed? When was the treatment plant built? How many more years will it operate? What safeguards are in place to prevent overflows of contaminated water into the surrounding area?

Local Recycling Program: Who runs the program? Where is the recycling center? Who pays for the program? How long has it been operating? What materials are collected? How are they collected? How much is collected per year? Does the



program pay for certain materials collected—for example, aluminum cans? What happens to the collected materials? Who buys the recycled materials from the program? How much money does the program get for the materials? What are the most difficult problems the program has to deal with to continue operating?

Local Composting Program: What is it? Who runs the program? Who pays for the program? How long has it been operating? What materials are collected for composting? How are they collected? How much is collected per month or per year? Where is the composting facility? Who gets to use the resulting compost? What are the most difficult problems the composting program has to overcome to continue operating?

Hazardous Waste Landfill: Where is it located? Who owns the landfill? Who operates the landfill? How much waste does it accept? What kind of waste does it accept? Where does the waste come from? What is the cost of disposal in the landfill? When was it built? When is the landfill expected to be full? Is hazardous waste treated before it is placed in the landfill? What safeguards are in place to prevent contamination of the surrounding area?

Underground Storage Tanks: How many underground storage tanks are there in the county or city? Where are most of them located? What kinds of materials are stored in the tanks? Who uses most of the underground storage tanks? Are the tanks old or new? What does it cost to buy and install an underground storage tank? Are any of the tanks leaking? Have any been replaced? What safeguards are in place to prevent the tanks from leaking?

Incinerator: What is it? Where is it located? Who owns the incinerator? Who operates the incinerator? How much waste can it burn? How much waste does it burn? What kind of waste does the incinerator facility accept? Where does the waste come from? How much does it cost to incinerate waste? When was the incinerator built? How many more years will it operate? What happens to the ash from the incinerator? What safeguards are in place to prevent contamination of the surrounding area?

3. Explain to the students that the purpose of this homework exercise is to identify what the community is doing now to handle waste generated in your area. Each team will gather information outside of class and prepare a report of their findings (2-3 pages).
4. Explain that each team is to make a short presentation on the results of their research during a follow-up class (specify the date). Allow each team to organize itself, assign specific tasks in order to complete the project, and select a spokesperson to make the team's presentation.



5. As a place for students to start gathering information, suggest that they call the RCRA/UST, Superfund, and EPCRA Hotline in Washington, D.C., which is open Monday through Friday, 9:00 a.m. - 6:00 p.m., Eastern Standard Time. The toll-free number is 800-424-9346; for the hearing impaired it is TDD 800-553-7672. The Hotline will be able to send publications and give students the names and phone numbers of EPA and state environmental department employees to call for more information on RCRA programs in your area. Other sources of information could include the local library and your county or local waste management agency, usually listed in a special section of your phonebook. Also, use the Contacts and Resources section at the end of the Haz-Ed materials.

## Class #2

1. Have the spokesperson for each group present the group's findings from the research project to the class.
2. Encourage students to ask questions and discuss issues as they are raised.
3. After the presentations, encourage discussions that compare the facts presented. For example: Compare the amount of materials put in landfills with the amount of materials that are recycled or composted. Compare the actions taken at various facilities to prevent contamination of the environment. Discuss the cost of each type of waste management. Compare the types of wastes the various facilities accept and where these wastes come from.
4. Ask students to suggest how to improve the management of wastes generated by your community.

## Extensions (Optional)

- A natural follow-up to these discussions is *Activity 10: Pollution Prevention*. It focuses specifically on what can be done to improve how waste is managed in your community.
- Consider inviting an EPA or a state employee involved in overseeing solid or hazardous waste programs to the class to describe the capacity available in your local landfill, how the location of the landfill was selected, what is being done to extend the life of the landfill, and any other relevant topics.



- Arrange a field trip to one of the types of facilities discussed in this activity. Many municipal landfills, incinerators, and so forth offer tours to the public.
- Have students use the newspaper or television news to track real waste disposal-related decisions made by your local government or industries. *Warm-Up 5: Hazardous Waste in the News* contains sample articles that you can distribute to the students to give them an idea of what to look for. You may want to use part of a bulletin board in your class to display newspaper articles relating to the subject. Set aside time periodically to discuss these actions and their potential impact on improving the local environment in the future.
- Consider showing a videotape describing waste management. Check with your school or local librarian and with local public television stations for educational videotapes describing municipal, household, or hazardous waste management. For example, the League of Women Voters of California's Education Fund produced two award-winning videotapes in 1990. *Cleaning Up Toxics at Home* and *Cleaning Up Toxics in Business* outline ways in which citizens and small businesses can significantly reduce pollution. Each tape is available for \$29.95 (\$49.95 for both) and may be ordered by calling The Video Project at 1-800-4-PLANET. Another video, called *The Rotten Truth*, was produced by the Children's Television Workshop for its 3-2-1 *Contact* program. The video is available for \$14.98, plus shipping and handling, by calling the distributor, Sony Wonder, at 1-800-327-3494.

